

Application No. 09/884,115
Reply to Office Action of September 9, 2003.

IN THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claim 1. (Currently Amended) A high voltage treatment equipment for liquid comprising:

a pair of electrodes, at least one electrode out of said pair of electrodes being arranged so as to be dipped into liquid; and

means for applying a pulsed power between electrodes of said pair of electrodes, wherein said pair of electrodes are constituted so that a region whose field strength is raised to a value larger than 500 kV/cm is present in the vicinity of said at least one electrode dipped into said liquid.

Claim 2. (Currently Amended) A high voltage treatment equipment for liquid comprising:

a pair of electrodes, at least one electrode out of said pair of electrodes being arranged so as to be dipped into liquid; and

means for applying a pulsed power between electrodes of said pair of electrodes, wherein at least one electrode dipped into said liquid is a ~~rod-like~~ rod shaped electrode whose diameter is not more than 1 mm.

Claim 3. (Original) The high voltage treatment equipment for liquid according to claim 2, wherein voltage of said pulsed power is not more than 100 kV.

Claim 4. (Currently Amended) The high voltage treatment equipment for liquid according to claim 2, wherein an extreme end of said ~~rod-like~~ rod shaped electrode is formed to be hemisphere.

Claim 5. (Currently Amended) The high voltage treatment equipment for liquid according to claim 2, wherein said ~~rod-like~~ rod shaped electrode is an anode electrode.

Claim 6. (Withdrawn) A high voltage treatment method for liquid comprising: using a pair of electrodes, at least one electrode out of said pair of electrodes being arranged so as to be dipped into liquid; and applying a pulsed power not more than 100 kV between said pair of electrodes to form a discharge state in said liquid between said pair of electrodes, wherein said liquid is treated so that a region whose field strength is raised to a value larger than 500 kV/cm is present in the vicinity of at least one electrode dipped into said liquid.

Claim 7. (Withdrawn) The high voltage treatment method for liquid according to claim 6, wherein one electrode dipped into said liquid is a rod-like electrode whose diameter is not more than 1 mm.

Claim 8. (Currently Amended) A high voltage treatment equipment for liquid comprising:

a pair of electrodes, at least one electrode out of said pair of electrodes being arranged so as to be dipped into liquid, wherein at least one of said electrodes is a rod shaped electrode whose diameter is not more than 1 mm;

means for applying a pulsed power between electrodes of said pair of electrodes; and

a movement mechanism for moving at least one electrode dipped into said liquid so as to change a relative position with respect to the other electrode.

Claim 9. (Cancelled)

Claim 10. (Currently Amended) The high voltage treatment equipment according to claim 8, wherein the other electrode ~~separately from the rod-like or linear electrode of said pair of electrodes~~ is a tubular or ~~rod-like~~ ring shaped electrode, and a relative positional relationship between said ~~rod-like or linear~~ rod shaped electrode and said tubular or ~~ring-like~~ ring shaped electrode can be changed while maintaining a state that said ~~rod-like or linear~~ rod shaped electrode passes a center point or an axial center of said tubular or ~~ring-like~~ ring shaped electrode.

Claim 11. (Currently Amended) The high voltage treatment equipment according to claim 10, wherein an end of said ~~rod-like or linear~~ rod shaped electrode is positioned in the vicinity of the tubular or ~~ring-like~~ ring shaped electrode.

Claim 12. (Currently Amended) The high voltage treatment equipment according to claim 10 wherein, said ~~rod-like or linear~~ rod shaped electrode is moved by said movement mechanism.

Claim 13. (Original) The high voltage treatment equipment according to claim 12, wherein said movement mechanism is a winding mechanism, which winds the linear electrode.

Claim 14. (Original) The high voltage treatment equipment according to claim 8, further comprising:

means for measuring a discharge voltage or a discharge current to said liquid; and
control means for controlling a movement speed of a relative position of an electrode by said movement mechanism on the basis of the value measured by said means for measuring a discharge voltage or a discharge current.

Claim 15. (Original) The high voltage treatment equipment according to claim 8, further comprising:

means for measuring the flow rate, conductivity or impedance of said liquid; and
control means for controlling a value of voltage applied by said means for applying the high voltage on the basis of the value measured by said means for measuring the flow rate, conductivity or impedance of liquid.

Claim 16. (Cancelled)

Claim 17. (Withdrawn) A high voltage treatment method for liquid comprising:
using a pair of electrodes, at least one electrode out of said pair of electrodes being dipped into liquid; and
applying a pulsed power between electrodes of said pair of electrodes to form a discharge state in said liquid between said pair of electrodes, wherein a discharge state of said at least one electrode dipped into liquid is continued while changing a relative position with respect to the other electrode.

Claim 18. (Withdrawn) The high voltage treatment method for liquid according to claim 17, wherein said liquid causes to flow continuously or intermittently.

Claim 19. (Withdrawn) The high voltage treatment method for liquid according to claim 18, wherein a flow of said liquid is controlled so that bubbles are not stayed in a discharge generation part of said pair of electrode.

Claim 20. (Withdrawn) The high voltage treatment method for liquid according to claim 2, further comprising a pipeline through which said liquid passes, wherein said rod-like electrode is positioned at an axial center of said pipeline, an electrode separately from said rod-like electrode out of said pair of electrodes is a ring-like or tubular electrode arranged coaxially with the inner peripheral surface of said pipeline and embedded in the wall of said pipeline, and said ring-like or tubular electrode is provided so that a plane part vertical to an axial direction is not exposed substantially to said liquid.

Claim 21. (Withdrawn) The high voltage treatment method for liquid according to claim 20, wherein no difference in diameter is present in a connection part between said pipeline and an inlet or outlet pipe.

Claim 22. (New) A high voltage treatment equipment for liquid comprising:
a pair of electrodes, at least one electrode out of said pair of electrodes being arranged so as to be dipped into liquid; and
means for applying a pulsed power between electrodes of said pair of electrodes,
wherein at least one electrode dipped into said liquid is a rod shaped electrode whose

diameter is not more than 1 mm, whereby a field strength of a region in the vicinity of said at least one electrode may have a value larger than 500 kV/cm.

Claim 23. (New) A high voltage treatment equipment for liquid comprising:

a pair of electrodes, at least one electrode out of said pair of electrodes being arranged so as to be dipped into liquid; and

means for applying a pulsed power between electrodes of said pair of electrodes, wherein at least one electrode dipped into said liquid is a rod shaped electrode whose diameter is not more than 1 mm, whereby a field strength of a region in the vicinity of said at least one electrode may have a value larger than 500 kV/cm at a voltage of not more than 100 kV.